



The primary operational TBI component of the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury

Brainwaves

DVBIC Brainwaves | Spring 2009

DVBIC Phone: (800) 870-9244 • Website: www.DVBIC.org

Message from

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DVBIC professionals have had the opportunity to travel the world, collaborating with international colleagues on the prevention and treatment of traumatic brain injury (TBI).

DVBIC was proud to partner with the Joint Chiefs of Staff on a mission to Iraq and Afghanistan, seeking to optimize and improve care of our Wounded Warriors with TBI and concussion. Many of these recommendations are now being implemented.

Kathy Helmick, DVBIC Deputy Director of Clinical and Educational Affairs/ DCoE Director, TBI Clinical Standards of Care Directorate, served on a delegation to London led by DCoE Director BG Loree K. Sutton, prompted by the invitation of Lt Gen Louis P. Lillywhite, United Kingdom (UK) Surgeon General. This trip allowed for continuation of dialogue with our UK allies in the Ministry of Defence. The delegation participated in a UK/US workshop on mild TBI. Future collaborations were discussed, such as creating a joint US/UK database.

DVBIC led the US delegation to the North Atlantic Treaty Organization (NATO) mild TBI exploratory meeting to begin development of international standards. We co-sponsored the scientific meeting of the International Brain Injury Association. We also participated in the first US-Japan TBI symposium as well as military information exchanges with both Israel and the Republic of Korea.

In this newsletter, we announce new materials in Spanish and we introduce a new column that will profile our network sites. First is Landstuhl Regional Medical Center, the critical nexus for triage and care of injured military personnel in deployed settings and Europe.

No matter where you are in the world, DVBIC personnel from all US military branches and the Department of Veterans Affairs are just an email or phone call away. Military healthcare providers in remote locations can obtain expert TBI consultation by contacting TBI.consult@us.army.mil. We look forward to continuing to work with you.

"The VA has highly valued DVBIC as our primary collaboration with the DoD to facilitate numerous advances in the care, research and education for our veterans with traumatic brain injury."



BG Michael J. Kussman, MD (US Army, Ret)
Under Secretary for Health
Veterans Health Administration
US Department of Veterans Affairs
(Upon his retirement from federal service)

VA/ DoD Evidence-Based Guideline: Management of Concussion/ Mild Traumatic Brain Injury

The Veterans Affairs/Department of Defense TBI workgroup recently released the clinical practice guideline (CPG): *Management of Concussion/Mild Traumatic Brain Injury*. A rigorous literature review was conducted to determine the best practice for the subacute to chronic evaluation and management of patients with concussion. The CPG contains algorithms for care as well as more detailed information to guide the primary care provider in the assessment, treatment, symptom management and referral requirements for patients with post-concussive symptoms.

The CPG can be downloaded at: www.warrelatedillness.va.gov/provider/tbi/VADoD-CPG-concussion-mTBI.pdf.



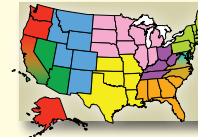
Nanotechnology: Size Matters

Nanotechnology is the science of engineering or manufacturing functional materials, devices and systems at the molecular and atomic level.

How small is that? A nanometer equals one billionth of a meter, roughly ten times the size of an atom. This measurement is comparable to the length that a strand of hair can grow in one second. At this level, the classical laws of physics do not apply. So a very tiny change can have a potent, far-reaching impact.

Since 2006, DVBIC has worked with the

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DVBIC Network of TBI Education

The Defense and Veterans Brain Injury Center was founded on three pillars: Clinical Care and Standards, Research, and Education. DVBIC devotes significant resources to its mission of providing education on the prevention, treatment and rehabilitation of TBI.

The Regional Education Coordinators (RECs) network includes staff at eight military treatment facilities, four Veterans Affairs (VA) Polytrauma Centers and two civilian sites. RECs serve their own site as well as an assigned geographic region (see regional map above).

RECs offer educational programs on TBI and
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DVBIC Site Profile Landstuhl Regional Medical Center



Landstuhl Regional Medical Center (LRMC), located in Germany, is the largest medical facility in the European Regional Medical Command. It provides tertiary care services to Department of Defense beneficiaries in Europe. LRMC also provides definitive Level 4 medical care (the highest level military post-trauma medical care outside of the continental US) within 24-72 hours after injury for Wounded Warriors evacuated from Iraq, Afghanistan, the African continent or other sites in Europe.

LRMC established its DVBIC site in 2006 to ensure state-of-the-art care and education on traumatic brain injury (TBI) in a setting outside the continental US. This year, the expanded LRMC TBI Center will enhance inpatient and outpatient treatment as well as patient/family education. TBI Center staff will also assist clinical healthcare providers with current research and standards of care.

One of the primary responsibilities of DVBIC staff at Landstuhl is to screen 100% of Wounded Warriors for the following:

- Concussion specifically related to the injury

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A **traumatic brain injury (TBI)** is caused by a blow/jolt to the head or penetrating head injury that disrupts the normal function of the brain. Not all blows/jolts to the head result in a TBI. TBI severity may range from **mild** (a brief change in mental status or consciousness) to **severe** (an extended period of unconsciousness or amnesia after injury). The terms **concussion** and **mild TBI** are interchangeable.



conduct outreach to Service Members (Active Duty, Guard and Reserve), Veterans, Families, healthcare providers and community groups. RECs also coordinate TBI education programs presented by DVBIC clinical and research staff.

In addition, the RECs have a core set of objectives. Each site and region has unique needs, so the RECs tailor their activities and programs accordingly. The following examples of site-specific activities represent the breadth and depth of education activities conducted by all RECs.

At Fort Carson, the REC provides a 30-minute presentation at the Army Community Services' Reintegration University, which is mandated for all returning Soldiers. The REC also teaches a twice-a-month course called "Back to Basic," to which Service Members are referred by their medical provider. Families are encouraged to attend.

In San Antonio, the presence of the Army Medical Department and soon-to-be completed Medical Education and Training Campus provides the opportunity for the REC and DVBIC clinical staff to educate thousands of healthcare providers on the full spectrum of TBI in a variety of pre-deployment medical courses, including the US Air Force Expeditionary Medical Support (EMEDS) training and the DoD Combat Casualty Care Course (C4). Many of these providers will be deployed to environments where clinical skills to identify and treat TBI are critical.

At the Tampa VA, the REC coordinates a weekly family education group in collaboration with the Departments of Psychology and Social Work and the Polytrauma clinical nurse educator. Topics

covered range from the medical management of a health problem to stress management for caregivers to community based services.

The DVBIC Headquarters Office of Education supports the creation and distribution of materials on TBI. It also engages in national education initiatives such as *brainline.org* and facilitation of the congressionally mandated *TBI Family Caregiver Curriculum*.

National and international experts have participated in developing many products for TBI education with DVBIC. These materials have been praised by the RAND Corporation for both clinical accuracy and appropriateness of risk communication.

The DVBIC Office of Education is planning for the 3rd Annual Military Training Conference on Traumatic Brain Injury, which will be held in Washington, DC, September 17-18, 2009 and is expected to have 800 providers in attendance.

The DVBIC Office of Education can be reached via email at education@DVBIC.org or by telephone at 1-800-870-9244.

Materials in Spanish

Spanish translations of three popular DVBIC handouts are now available. *Signs and Symptoms of Traumatic Brain Injury (TBI)*, *Frequently Asked Questions About the Defense and Veterans Brain Injury Center (DVBIC)* and the *DVBIC Fact Sheet on TBI* may be downloaded at www.DVBIC.org. To order print copies, please email your request to education@DVBIC.org.



Nanotechnology: Size Matters ...con't. from page 1

Massachusetts Institute of Technology (MIT) Institute for Soldier Nanotechnologies (ISN) to improve mission sustainability, completion and survivability through better gear.

This might mean using nanotechnology to develop "smart" clothing that combines high-tech medical capabilities with light weight and comfort. It might also mean developing materials that both detect hazardous substances in the environment and offer protection from their effects.

Can you imagine military uniforms made of nano-designed fabrics that deliver pre-packaged medications and monitor body temperature? How about a battle suit that acts as an exoskeleton and increases human strength and speed while providing lightweight protection against ballistics? Dr. David F. Moore, Director of the DVBIC Research Division, is working to realize this vision.

Dr. Moore serves as Visiting Scientist to ISN's multidisciplinary research team, working with Professor Raul Radovitzky in a research

partnership between DVBIC, the Army Research Office (ARO) and the Joint Improvised Explosive Device Defeat Organization (JIEDDO). Together, they have created the most sophisticated and comprehensive virtual human and animal head simulation models ever developed, which will help researchers learn more about preventing blast impact, ballistic injury and concussion.

"We hope to optimize the human-materiel interaction – maximizing a person's ability to do a tough job in a challenging environment," Dr. Moore notes. "Nanotechnology spans all of science. So we must partner with other disciplines and collaborate in developing the full medical potential of these applications."

For more information on the MIT Institute for Soldier Nanotechnologies (ISN), please visit <http://web.mit.edu/isn/index.html>.

David F. Moore, MD, PhD serves as DVBIC Deputy Director for Research, DCoE TBI Scientific Advisor and ISN Visiting Scientist.

DVBIC Site Profile:

Landstuhl Regional

Medical Center ...con't. from page 1



that resulted in evacuation

- Concussion that occurred in previous deployments or earlier in the current deployment

Each Wounded Warrior is screened using the LRMC TBI questionnaire. Service Members (SMs) who had an event that caused an alteration of consciousness or loss of memory for events immediately before or after the injury are further evaluated. These individuals are considered positive and symptomatic, determining a need for further clinical evaluation, if they have any of the following symptoms:

- headache
- sensitivity to noise or light
- nausea or vomiting
- dizziness
- imbalance
- concentration or memory difficulties

Comprehensive screening enables staff to initiate evaluation or care at the earliest stages of medical intervention. After each Warrior has been evaluated for symptoms and severity of injuries, further evaluation is completed and treatment is initiated, as indicated. A personalized air evacuation and care plan is developed based on:

- extent of injury
- the individual's needs
- available military treatment facility/resources to meet those needs
- proximity of resources to the SM's duty station and family

From Landstuhl, Warriors may be transferred to the continental US for further care, treated at LRMC and its outlying clinics, or returned to duty. The military-civilian staff at LRMC works closely with those who have sustained a TBI to ensure a smooth transition across the continuum of care and recovery, which may include Department of Defense, Department of Veterans Affairs and civilian facilities.

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